

Stavrianopoulos et al.

Serial No.: Not Yet Known

(Divisional of S.N. 10/096,075, filed March 12, 2002)

Filed: Herewith

Page 3 [Preliminary Amendment (Accompanying Divisional Application
Under 37 C.F.R. §1.53(b)) ---January 21, 2004]

PLEASE AMEND THIS APPLICATION AS FOLLOWS:

In The Title:

Change the title of the invention to:

-- PROCESS FOR PREPARING NOVEL CYANINE DYE LABELING REAGENTS --

In The Claims:

Please cancel claim 1.

Please add new claims 287-300 as follows:

Claim 1 (Canceled Herein)

Claims 2-286 (Previously Canceled)

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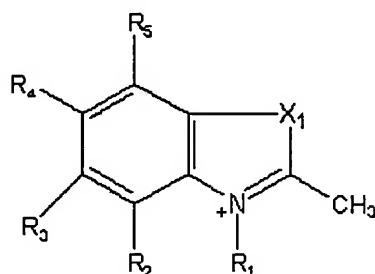
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287. (NEW) A process for preparing a cyanine dye labeling reagent, said process comprising the steps of:

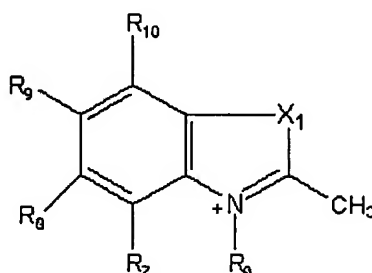
(a) providing:

(i) a first intermediate compound comprising:



wherein X₁ comprises carbon, oxygen, nitrogen or sulfur; and

(ii) a second intermediate compound comprising:

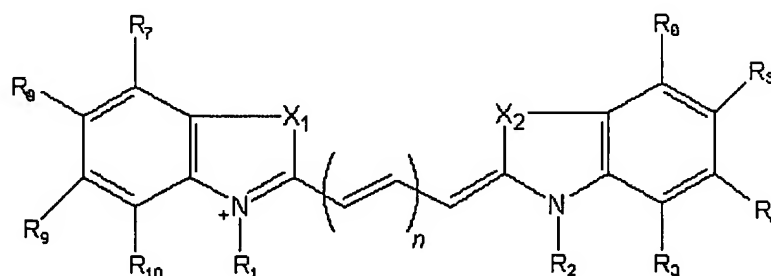


wherein X₁ comprises carbon, oxygen, nitrogen or sulfur;

wherein at least one of R₁ through R₁₀ comprises a reactive group capable of forming a carbon-carbon linkage with a target, and

(ii) linking reagents suitable for linking said first intermediate compound and said second intermediate compound;

(b) forming a reaction mixture comprising said first intermediate compound (i), said second intermediate compound (ii), and said linking reagents under conditions to link (i) and (ii) to form a compound;



wherein at least one of R₁ through R₁₀ comprises a reactive group capable of forming a carbon-carbon linkage with a target, and wherein *n* is an integer of 1, 2 or 3, and wherein X₁ and X₂ independently comprise carbon, oxygen, nitrogen or sulfur.

288. (NEW) The process of claim 287, wherein said providing step, the reactive group comprises an alkene group, an alkyne group, a halogenated compound or a metallo-organic compound.

289. (NEW) The process of claim 287, wherein R₁ through R₁₀ independently comprise hydrogen, C₁-C₆ alkyl, a C₁-C₄ alkyl group having a hydrophilic substituent comprising sulfonate, carboxylate, hydroxyl, substituted amines and quaternary amines, aliphatic, alkenes, alkynes, charged or polar groups, or combinations of any of the foregoing.

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290. (NEW) The labeling reagent of claim 288, wherein said metallo-organic compound comprises mercury, zinc, copper or platinum.

291. (NEW) The labeling reagent of claim 288, wherein said metallo-organic compound comprises an alkene group or an alkyne group.

292. (NEW) The process of claim 287, wherein said reactive group attached to said compound formed in step b further comprises a backbone that comprises at least two consecutive peptide bonds.

293. (NEW) The process of claim 287, wherein at least one of said two consecutive peptide bonds are separated by a single atom.

294. (NEW) The process of claim 293, wherein said single atom comprises C, N, S, O or P.

295. (NEW) The process of claim 292, wherein said backbone comprises one or more carbon atoms.

296. (NEW) The process of claim 292, wherein said backbone comprises at least one non-carbon atom.

297. (NEW) The process of claim 296, wherein said non-carbon atom comprises sulfur, oxygen or nitrogen.

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298. (NEW) The process of claim 292, wherein said backbone further comprises at least one additional moiety comprising peptide bonds, amino acids, aliphatic chains from C₁ through C₂₀, alkene groups, alkyne groups, saturated or unsaturated or partially saturated rings, heterocyclic rings or sugars.

299. (NEW) The process of claim 292, wherein said backbone comprises a di-peptide or an oligo-peptide.

300. (NEW) The process of claim 299, wherein said di-peptide or oligo-peptide comprises (glycine)₂ or (glycine)₄.

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